

STORMS AND WEATHER WARNINGS

WASHINGTON FORECAST DISTRICT

The month was characterized by considerable activity in the Tropics, in that three disturbances occurred. The first, which appeared on August 28 in the vicinity of Dominica and continued into September, was of major importance. The other two, which developed over the southeastern Gulf of Mexico on the 13th and 28th, were of lesser intensity.

A tropical disturbance at the beginning of the month was central about latitude 25° N. and longitude 70° W. The history and subsequent movement of this disturbance is discussed in the MONTHLY WEATHER REVIEW for August.

Later information which has just come to hand indicates that the center of this storm passed between Antigua and Montserrat (Lesser Antilles) at 3:30 a. m. of the 28th. At 2 a. m. of the 29th the center with a reading of 28.56 inches passed over the eastern end of the island of St. John. The western end of the island of Tortola experienced hurricane winds from 6 p. m. of the 28th to 6 a. m. of the 29th. The storm was accompanied by torrential rains and by winds estimated about 100 to 110 miles an hour. The rains of the 28th and 29th at St. Kitts, 17 inches, and Nevis, 20 inches, are reported to be the heaviest recorded in 40 years. More than 100 lives were reported lost and more than 1,000 houses destroyed, while serious damage resulted to crops along the path of the storm from Montserrat to St. Thomas. The observer at St. Thomas estimated the wind at 110 miles per hour from the north-northeast between midnight and 2 a. m. of the 29th. Estimates of 100 to 110 miles per hour were also made at Montserrat and Antigua between 3 a. m. and 4 a. m. of the 28th.

In connection with a disturbance over eastern Quebec on the 5th, northwest storm warnings were ordered for the Atlantic coast from Sandy Hook to Eastport. Winds of moderate gale force occurred south of Nantucket, but to the northward winds were only fresh to strong.

On the 9th a disturbance of moderate intensity was central over the upper St. Lawrence Valley, and southwest storm warnings were displayed on the Atlantic coast from Delaware Breakwater to Eastport. A secondary storm developed off the southern Massachusetts coast on the morning of the 10th and warnings were changed to southeast from Nantucket to Eastport. Strong winds and gales occurred generally over the region indicated.

On the morning of the 13th there were indications of the development of a tropical disturbance over the southeastern Gulf of Mexico. This disturbance moved northwestward during the following 12 hours. It thence recurved rather sharply and moved slowly east-northeastward during the next two days, striking the north-west Florida coast near and east of Port St. Joe about 11 a. m. of the 15th. The highest winds at Port St. Joe have been estimated at 75 to 80 miles per hour from the northwest. At St. Andrews the winds at their highest were estimated at from 60 to 75 miles per hour and at Carrabelle from 40 to 50 miles with lowest barometer reading at the latter 29.10 inches at about 2:30 p. m. of the 15th. The lowest pressure reading at Apalachicola was 29.12 inches at 12:40 p. m. of the 15th, and the highest wind velocity was 68 miles per hour from the southeast.

In commenting on this disturbance the official in charge at Pensacola, Fla., writes as follows:

No report of damage at sea has been received with the exception of the three-masted schooner which was blown ashore near Carra-

belle, and the blowing ashore of two fishing boats near Port St. Joe. The harbor damages were relatively small considering the force and duration of the storm, which is probably explained by the timely warnings which were evidently heeded, as is indicated by the St. Andrews storm warning display man, who states that all boats in the bay were placed in safe harbors upon receipt of the warnings.

From the time of the inception of this storm full information was disseminated by every available means to coast interests and to vessels at sea. While the storm did not attain hurricane intensity, winds of gale force occurred along its immediate path, and some damage to property between Carrabelle and St. Andrews is reported. The disturbance passed east-northeast across northern Florida and was central on the evening of the 16th on the South Carolina coast. It then continued its north-eastward course and by the evening of the 18th was over the steamship routes south of Newfoundland. Strong winds and gales were general along the Atlantic seaboard, warnings of which were issued well in advance.

Pressure was low over the northwestern Caribbean from the 23d to the 27th, but vessel reports indicated no cyclonic circulation. On the 28th information was broadcast by radio announcing the presence of an incipient disturbance over the southeastern Gulf. Radio reports on the morning of the 29th showed a disturbance of slight but apparently increasing intensity moving northward, and storm warnings were hoisted on the east Gulf coast. Information was disseminated that the disturbance would move northeastward and cause dangerous gales along its path. The disturbance advanced rapidly north and northeastward and crossed the north-west Florida coast near Cedar Keys during the late afternoon of the 29th. During the afternoon of the 29th storm warnings were ordered for the south Atlantic coast from Jacksonville to Fort Monroe, Va., in anticipation of the northward movement of the tropical disturbance. By the following morning the storm was over the North Carolina coast with increased intensity. Storm warnings, which were displayed on the middle Atlantic coast in connection with a development over Virginia, were continued. Storm warnings were also ordered for the north Atlantic coast. The disturbance moved rapidly northward and easterly gales were experienced along the entire Atlantic seaboard.

Frost warnings were issued on the 10th for New York, Pennsylvania, New Jersey, West Virginia, and the eastern portions of Kentucky, Tennessee, and Ohio; and frosts occurred over portions of the States mentioned, but in other portions frost was prevented by cloudiness.

On the 23d, 24th, and 25th frost warnings were disseminated for portions of New England and the northern portion of the Middle Atlantic States, and frosts occurred substantially as indicated in the warnings. On the 30th frost warnings were issued for Tennessee and Kentucky and were verified. In addition, frosts occurred in the extreme north portion of the east Gulf States and in the southern Appalachian region.

During the early days of the month the special advices and bulletins furnished to the world fliers twice daily and at other times when required, materially assisted in the successful carrying out of their flying program.—*R. H. Weightman.*

CHICAGO FORECAST DISTRICT

Frost warnings.—September was cool over virtually the entire forecast district—decidedly so in the eastern portion, and frost warnings were required with greater frequency than usual. In fact, warnings of this character were issued for some part of the district on no fewer than